

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P-02515-PCT	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/SE2003/001546	International filing date (day/month/year) 05.10.2003	Priority date (day/month/year) 07.10.2002
International Patent Classification (IPC) or national classification and IPC B66C 13/06, E02F 9/24		
Applicant Indexator AB et al		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:

- a. ☒ (sent to the applicant and to the International Bureau) a total of 2 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

- b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

Date of submission of the demand 27.04.2004	Date of completion of this report 06.12.2004
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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE2003/001546

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This report is based on a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
 - ☐ the international application as originally filed/furnished
 - ☒ the description:
 - pages 1 - 8 _____ as originally filed/furnished
 - pages* _____ received by this Authority on _____
 - pages* _____ received by this Authority on _____
 - ☒ the claims:
 - pages _____ as originally filed/furnished
 - pages* _____ as amended (together with any statement) under Article 19
 - pages* 1 - 2 received by this Authority on 10.09.2004
 - pages* _____ received by this Authority on _____
 - ☒ the drawings:
 - pages 1 - 7 _____ as originally filed/furnished
 - pages* _____ received by this Authority on _____
 - pages* _____ received by this Authority on _____
 - ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
 - ☐ the description, pages _____
 - ☐ the claims, Nos. _____
 - ☐ the drawings, sheets/figs _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to the sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages _____
 - ☐ the claims, Nos. _____
 - ☐ the drawings, sheets/figs _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE2003/001546

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-8</u>	YES
	Claims	_____	NO
Inventive step (IS)	Claims	<u>1-8</u>	YES
	Claims	_____	NO
Industrial applicability (IA)	Claims	<u>1-8</u>	YES
	Claims	_____	NO

2. Citations and explanations (Rule 70.7)

Documents cited in the International Search Report:

D1: US 5096247 A

D2: WO 00/53522 A1

The cited documents represent now, after the amendment to the claims have been made, only the general state of the art.

The invention defined in the amendment claims 1-8 is not disclosed by any of these documents.

The cited prior art does not give any indication that would lead a person skilled in the art to the claimed swing damping arrangement pertaining to a swing damper for supporting a tool that hangs from a crane arm or the like, wherein the damper includes a brake arrangement. The brake arrangement includes a brake unit having discs that can swing around the pivot axle of the pivot joint. The arrangement includes also a tensioning element which functions to press the discs together in a braking operation, and in that the tensioning element is located at least partially within one or two pivot bearings located between the upper part and the lower part.

Therefore, the claimed invention now is not obvious to a person skilled in the art.

Accordingly, the invention defined in the amendment claims 1-8 is novel and is considered to involve an inventive step. The invention is industrially applicable.

CLAIMS

1. A swing damping arrangement, particularly an arrangement pertaining to a swing damper (1) for supporting a tool (5) that hangs from a crane arm (2) or the like, wherein the damper (1) includes an upper part (11) connected to the crane arm (2), and a lower part (12) which supports a working implement (5) or the like, either directly or via a rotator (4) for instance, wherein the upper part (11) and the lower part (12) are pivotally connected to each other via a pivot joint (13), and wherein the damper (1) includes a brake arrangement (50), **characterised** in that the brake arrangement (50) includes a brake unit (60) having discs (70,80) that can swing around the pivot axle (14) of the pivot joint (13), in that at least one (70) of said discs is secured against rotation relative to the upper part (11), in that at least one (80) of said discs is secured against rotation relative to said lower part (12), in that the arrangement includes a tensioning element (90;110;130) which functions to press the discs (70,80) together in a braking operation, and in that the tensioning element (90;110;130) is located at least partially within one or two pivot bearings (46) located between the upper part (11) and the lower part (12).
2. An arrangement according to Claim 1, **characterised** in that the brake unit (60) is situated in a space (200) between two pivot bearings (46) located between the upper part (11) and the lower part (12).
3. An arrangement according to Claim 1 or 2, **characterised** in that the upper part (11) includes an abutment surface (22) for driving at least one disc (70).
4. An arrangement according to any one of Claims 1-3, **characterised** in that the lower part (12) includes an abutment surface (34) for driving at least one disc (80).
5. An arrangement according to any one of Claims 1-4, **characterised** in that at least one disc (70) has a brake lining (75) on at least one side thereof.
6. An arrangement according to any one of Claims 1-5, **characterised** in that discs (70,80) include a through-passing hole for the tensioning element (90;110;130).

7. An arrangement according to any one of Claims 1-6, **characterised** in that the force generated by the tensioning element (90;110;130) in order to press the discs (70,80) together is based on a spring force and/or on the application of a pressure medium.

- 5 8. A method relating to a swing damper, particularly to a swing damper (1) for carrying a tool (5) that hangs from a crane arm (2) or the like, wherein the swing damper (1) includes an upper part (11) which is connected to the crane arm (2), and a lower part (12) which carries a working implement (5) or the like, either directly or via a rotator (4) for instance, wherein the upper part (11) and the lower part (12) are pivotally connected
10 together via a pivot joint (13), and wherein the swing damper (1) includes a brake arrangement (50), **characterised** in that swinging movement is braked by virtue of said upper part (11) being caused to entrain at least one disc (70) of a brake unit (60) as said part swings, and by virtue of the lower part (12) being caused to entrain at least one disc (80) of the brake unit (60) as said lower part (12) swings, and in that the discs (70,80) are
15 pressed together by a tensioning element (90;110;130) in a braking operation where the tensioning element (90;110;130) is located at least partially within one or two pivot bearings (46) located between the upper part (11) and the lower part (12).
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